



Metal Etch Process

“Hard Mask Metal Etch”

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Exhibit B
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Outline

Hard-Mask Metal Etch

- Current Status for HM-M1
- Comparison: Previous work Vs Current work
- The Current Challenge for HM-M1
- The Argon Chemistry
- The Current FEM Results
- Future Work
- Conclusions
- Appendix



Current Status for HM-M1

- 1) Finish process verification on metal etch step after HM open. Current results on SL wafer show good CD, profile angle, profile microloading, no corrosion attack, and lesser sidewall roughness.
Some oxide texturing residue due to ultra micro masking effect is minimized
- 2) Improve current MHM recipe by incorporating Ar chemistry at the ME step
Also add pre-initialize step to sputter clean wafer before metal etch.
Initial results show substantial residue/oxide texturing improvement
- 3) Run repeatability test and prepare MHM wafers using current bkm process for Thin Film Group to optimize IMD deposition
- 4) Finish etching FEM wafer to finalize the final AEI CD
- 5) Currently the HM M1 recipe version is ready for integration lot

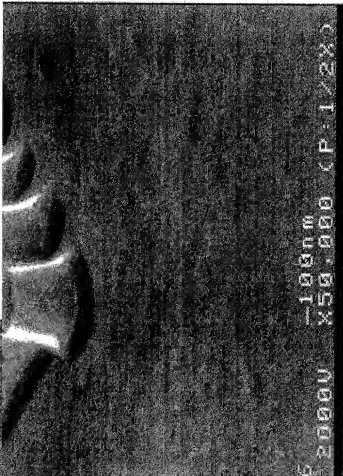
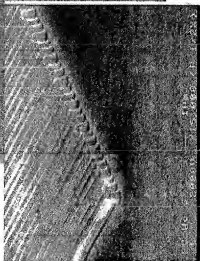
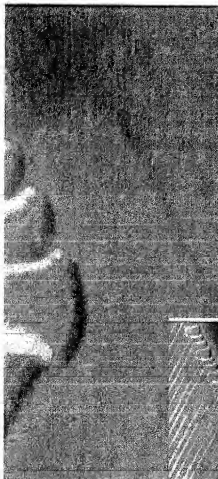


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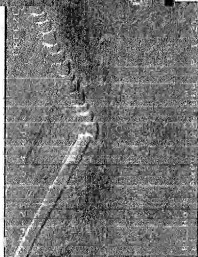
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WF 724-25

Center Vs Edge



edge



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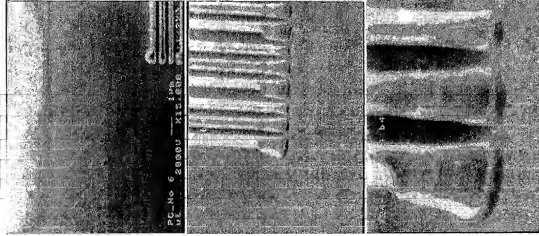
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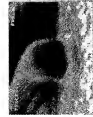
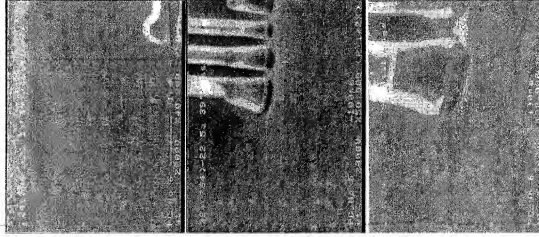


Comparison with and without sputter etch

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